

# Battle Command: Replicating the CTC Experience

Colonel Ronald L. Bertha, US Army

**B**ATTLE COMMAND is critical for Army commanders to employ their units effectively. Only through the mastery of battle command can a commander visualize the enemy, terrain and weather as well as his own, adjacent and supporting organizations. Battle command properly employs and synchronizes all combat assets in time, space and purpose to produce victory. However, as important as it is, battle command is an art that leaders can only develop over time and predominantly through experience. In fact, "the less experience you have, the more problems you are going to have with teaching and understanding the art of battle command."<sup>1</sup>

The US Army's official account of the Gulf War credits our Combat Training Centers (CTCs) with "resounding success" in helping our units prepare for war.<sup>2</sup> But more important, CTC rotations have given commanders at the corps level and below the best noncombat opportunity to develop the art of battle command.

Still, CTCs are expensive to maintain and are impractical as a sole source of battle command experience. Therefore, this article examines a proven alternative to replicate effective battle command experience. As training costs increase and time and training dollars decrease, efficient alternatives to the CTCs must be developed to help our Army maintain its fighting edge.

The best, most proven way to replicate the CTC battle command experience is adequate home-station field training. As simple as this idea sounds, recent unit performance at the CTCs shows that necessary field training has not occurred to the degree or standard necessary to prepare commanders and units for combat. The US Army Forces Command (FORSCOM) recognizes that the amount and level at which field training exercises are conducted does matter and now requires "units to conduct battalion-level field exercises before deploying to the National Training Center (NTC), Fort Irwin,

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California, and the Joint Readiness Training Center, Fort Polk, Louisiana."<sup>3</sup>

Multiple opportunities already exist or are being developed, especially in the area of simulations, to help replicate the CTC battle command experience. Though useful, such alternatives have not proven nearly as effective as properly planned and executed field training. In fact, overreliance on simulations can produce negative training benefits. In July 1998 the 116th National Guard (NG) Enhanced Brigade rotated to the NTC. Commenting on that rotation, Major General Roger C. Schultz, Director, US Army National Guard, stated, "Simulations do not totally prepare a commander to fight the OPFOR [opposing forces] at NTC. Accordingly, simulations will likely never totally prepare any commander for war. There is simply nothing that completely replicates the fog of being employed against a freethinking enemy with 24-hour a day presence."<sup>4</sup>

This article emphasizes the battalion/task force level, and the references to CTCs pertain to the NTC, the JRTC and the Combat Maneuver Training Center (CMTC)—not the Battle Command Training Program which trains brigade, division and corps commanders and their staffs. However, before exploring the subject of home-station field training, it is essential to examine the art of battle command, investigate why the CTCs have been so

successful and determine the root cause of our Army's current lack of training readiness.

## **BattleCommand**

US Army Field Manual (FM) 100-5, *Operations*, defines battle command as the art of battle decision making, leading and motivating soldiers and their organizations into action to accomplish missions. It includes perceiving the current state and visualizing the future state and then formulating concepts of operations to get from one to the other at least cost.

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Battle command also includes assigning missions, prioritizing and allocating resources, selecting the critical time and place to act, and knowing how and when to make adjustments during the fight.<sup>5</sup>

As clear as this may be conceptually, all current and former commanders must agree with Brigadier General William G. Webster, Commanding General, NTC, that "executing battle command is an extremely complex and difficult task."<sup>6</sup> Even though it is complex and difficult, few can argue against the importance of battle command, especially considering that its two vital components—decision making and leadership—capture the essence of being a commander.

Much has been researched and written on battle command since 1993, when former Training and Doctrine Command (TRADOC) Commander, General Fredrick Franks Jr., instituted the terminology.<sup>7</sup> Today, the Army even has Battle Command Battle Laboratories at Fort Gordon, Georgia, and Fort Huachuca, Arizona. The critical question behind this institutional interest is how to develop the art among leaders.

Author Michael T. Hayes recommends giving potential commanders more time in troop units to learn critical competencies essential for the art of battle command.<sup>8</sup> The US Navy also recognizes the importance of troop experience and requires those officers designated for command to fulfill a complete tour as a ship's executive officer before assuming command of the ship. On 1 October 1998, the US Army enacted the Officer Professional Management System, which provides potential commanders at battalion level and above more opera-

tional assignments to develop their knowledge and experience.

However, multiple assignments to tactical units do not themselves develop the art of battle command. This art is based on intuition and is "demonstrated by the commander who by combat experience, training and study—or any combination of the three—reads the battlefield and does the right thing faster, more accurately and more decisively than the enemy."<sup>9</sup>

Like job assignments, professional education is an important part of the leader-development process. The Army's institutional training and an officer's independent study are vital in developing a leader's conceptual, analytical and critical thinking capability—which hone decisiveness. However, teaching battle command in a classroom is like teaching a team to play football on a chalkboard; it has limitations, because like football, battle command is not a spectator sport; one learns by doing.

Among other warfighting benefits, repetitive training experiences help develop the necessary intuitive sense in leaders. Of course, the important issue here is how to conduct training most efficiently, particularly focused on improving decision making and leadership.

In this period of reduced training dollars, the Army is working hard to leverage simulations. While much of this technology shows distinct promise for developing technical and even tactical skills, Lieutenant General Thomas Burnette, warns of the inherent shortcomings of simulations. He cautions that "live training remains the foundation of current training strategies," especially since virtual simulators and constructive training tools "cannot fully replicate all aspects of the live training environment."<sup>10</sup>

Beyond training technical and tactical skills—essentially the leadership aspect of battle command—simulations have little proven value in developing a commander's intuition—the critical factor for making good and timely decisions. In fact, commanders often take negative lessons from simulations. For instance, gaining smoke effects in Janus is a constant because wind does not change, inversion effects are not applied and indirect fire is unrealistically responsive.<sup>11</sup> Achieving the necessary effects of smoke is more challenging under actual environmental conditions, while trying to synchronize security forces, direct and indirect fire suppression and obstacle reduction assets. Of course, one would never know how difficult this really is if they only tried it using Janus. According to Brigadier General J.D. Thurman, "everything always works in simulation." Observer/controllers commonly overhear NTC rotational commanders say, "This is not the way it happened in Janus."<sup>12</sup>



*Just as a commander cannot learn to synchronize all the combat functions during a task-force deliberate breach operation using simulations (like Janus), the unit cannot fully understand how to conduct such an operation by doing it once on the ground. Effective training requires repetition. Despite reluctance to admit it, the retraining step may be the most important of our Army's training model.*

## Visualize the Battlefield

A continuing requirement for effective battle command is "visualizing the battlefield, something virtually impossible even with the virtual reality of modern day simulations," according to Brigadier General Thurman.<sup>13</sup> Among other shortfalls, he cites the following disadvantages of simulations:

- Lack of friction and rigor.
- Inadequate replication of terrain and logistic functions.
- Oversimplified communication architecture.
- Inability to learn the true difficulty and importance of synchronizing and integrating combat multipliers.<sup>14</sup>

The lack of realism in simulations does not help promote leader confidence or competence, essential for bold and decisive leadership. The necessary intuition must be developed through realistic experience, like that available at the CTCs. Only through the most realistic experiences—both seen and felt—can a leader learn effective battle command because "nothing in the 'synthetic' world will ever equal the effectiveness of high-quality field training exercises and combined arms live fires."<sup>15</sup>

Army units cannot simply train for training sake. Nor can leaders use financial or time excuses to limit necessary and effective home-station field training. Rather, the Army still needs the proven training, doctrine and practices that produced

victory in the Gulf War. As General Barry R. McCaffrey said, "This war didn't take 100 hours to win; it took 15 years."

## Combat Training Centers

Studies of combat experience in previous wars indicated that a method was necessary to steepen the learning curve prior to combat to reduce battle casualties significantly.<sup>16</sup> The CTCs were developed to provide the most realistic battlefield training short of actual combat.<sup>17</sup> Without a doubt, the CTCs have been instrumental in improving the combat readiness of our Army. As a result, many countries throughout the world have instituted or are trying to develop similar training centers.

The overwhelming success of the CTCs has made them the cornerstone of our Army's training readiness. Because of personnel turbulence that often occurs just after a CTC rotation, many argue that the greatest value of the CTCs is the tough, realistic, hands-on, training experience for leaders and soldiers, rather than preparing units for combat. Additionally, these centers help establish doctrine, determine standards for training and leader development, provide organizational and materiel requirements, and give keen insights for soldier needs.

The effectiveness of the CTCs cannot be duplicated by any other training method. So what makes the CTCs so successful, particularly as a superb battle command experience for leaders? Certainly

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the training realism provided by intense scenarios, real terrain and weather, and a freethinking, professional OPFOR are key ingredients of the CTC experience. Brigadier General Thurman includes the following as essential elements for providing realistic training at the CTCs:

- True replication of time and space.
- The need for commanders to exercise battle command to integrate and synchronize all combat functions (nothing is notional).
- Pressure on commanders to perform.
- Observer/controllers (O/Cs) and the after action review (AAR) process, which ensures immediate feedback.<sup>18</sup>

Replicating CTC realism using only simulations is difficult. However, the effect can be nearly duplicated in any field environment. Except for the sophisticated instrumentation system that helps to enhance AARs and a professional OPFOR, the CTC experience can be adequately replicated during home-station field training. In fact, many of the recent units which have performed well at the CTCs have developed a training program that replicates the CTC's.

More important, however, because of their high cost (up to \$12 million for a heavy brigade combat team at the NTC) and limited number of CTC rotations each year (10 rotations per year at each CTC), the Army must maximize the opportunity presented by a CTC rotation. A former senior maneuver O/C at the CMTC explains: "Units must arrive at the CTCs ready for a 'graduate-level' training experience. This demands comprehensive home-station training . . . Otherwise, the full potential of the CTC experience will not be realized."<sup>19</sup>

Ultimately, the Army sees training for CTC rotations as training for war. Recognizing the linkage, FORSCOM renewed a regulation that requires every battalion task force scheduled for a CTC rotation to conduct at least a five-day maneuver training exercise against an OPFOR.<sup>20</sup> Will commanders truly make the most of this force-on-force maneuver training requirement? Do they know how to conduct battalion-level maneuver training effectively? The answer in many cases is "no." Our CTCs over the years may have "infused in field

commanders an institutional obsession to train realistically for combat," but for various reasons we have not satisfied this obsession through training at home station.<sup>21</sup>

What ensures that units not scheduled for an upcoming CTC rotation will conduct necessary and appropriate home-station field training, especially at the battalion task-force level? Even without real world deployments, battalion-level units only have the opportunity to rotate through a CTC every 18 to 30 months. Some battalion task force commanders never have a CTC battle-command experience at all. Units cannot wait for a CTC rotation to conduct effective battalion-level field training exercises. Home-station opportunities must continuously maintain combat readiness for war, because "our Army *never* has an 'off-season.'"<sup>22</sup>

## **Training Readiness**

*In no other profession are the penalties for employing untrained personnel so appalling or so irrevocable as in the military.*

—General Douglas MacArthur

The deteriorated readiness of the US Armed Forces has captured the critical interests of Congress and the media. Training plays a part in more ways than one. Consider what appear to be fundamentally money and personnel issues. Pay, benefits, operating tempo (OPTEMPO) and the economy are oft-cited reasons for recruiting and retention woes, but training readiness also greatly affects personnel readiness. How can soldiers be satisfied with their job, career or profession when they are not given the opportunity to train to their individual potential and that of their unit? Among other reasons, soldiers, especially officers, who might have a better quality of life outside the service, stay in the Army because they enjoy what they do. Without training effectively and preparing adequately for a war or crisis, soldiers cannot "be all they can be." Money may be tight, but being able to train the basics through battalion-level field exercises is imperative—for combat readiness and to retain quality soldiers and leaders.

Even though the Army will somehow work through its current short-term challenges in recruitment and retention, there are long-term consequences. Will we have adequate experience at all ranks 10 to 15 years into the future? Investing in future technologies and modern equipment is certainly essential for long-term readiness. However, will the Army have the skilled leaders tomorrow to lead modernized units if they do not receive the necessary training experiences today? It takes 15 to 18 years to develop battalion commanders, and today's battalion commanders will be our corps command-



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ers in 2010. Therefore, we are mortgaging the battle command expertise of future commanders today.

Training readiness has suffered not only at the expense given to future modernization, but it has also been the bill-payer for insufficient base operations and real property maintenance funds. As General Dennis J. Reimer, former US Army Chief of Staff, told the Senate Armed Services Committee: "Our commanders have been forced to migrate funds from training accounts to base support. This migration of funds, necessary to ensure minimum quality of life standards at our installations, has reduced home-station training. Commanders across our Army are experiencing difficulty in funding battalion- and brigade-level home-station training that was once common in our Army, and was a key ingredient of the highly trained units that won the Gulf War."<sup>23</sup>

There is little doubt that a lack of training dollars has significantly degraded the Army's training readiness, particularly at the battalion level. However, recent evidence indicates that readiness problems also exist at company level and below, despite the fact that this level of training has always been resourced. Sergeant First Class Schwendeman, a Scout Platoon O/C at NTC, summarized the perspective of many CTC O/Cs and commanders: "What was once the run phase (or 'test' if you will) of unit readiness, the NTC is now being used as the

walk and sometimes crawl phase of their training. This trend is noticeable down to the individual soldier. What were once basic skills are lost to the lack of training done at home station."<sup>24</sup>

What has gone wrong? Beyond a lack of training dollars, Brigadier General Thurman attributes inadequate training readiness to commanders who fail to comply with our training doctrine in US Army FMs 25-101, *Battle Focused Training*, and 25-100, *Training the Force*.<sup>25</sup> Indeed, executing effective and efficient training seems to have become a lost art. Units do not import the proven training models used by the CTCs to home station, where it is much less costly, but nearly as effective.

The Army must resource battalion-level training beyond the level which FORSCOM has recently authorized for units preparing for the CTCs. Further, since leaders must ensure all training resources are used efficiently, the subject of the next section will be how to train effectively.

## Training

Our capstone training manual, FM 25-100, outlines nine principles of US Army training and offers an eight-step training model.<sup>26</sup> "Train the way we fight," is not just an Army training principle; it captures the fundamental reformation of Army training that occurred shortly after the formation of TRADOC in 1973.<sup>27</sup> This battle cry pushed soldiers

and leaders out of the classroom and into the field to train under the most realistic conditions possible; it became the impetus for our CTCs. In fact, using tasks, conditions and standards to assess training means that training effectiveness often depends on the realism or difficulty of the existing conditions.

Training as one fights is not only important for soldiers and small-unit training, but the Army has recently realized it is important at the battalion level as well, particularly before a rotation to one of the CTCs. However, the specific requirement for this

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battalion-level training calls for a 5-day minimum combined arms maneuver exercise, using an OPFOR and external O/Cs to provide feedback.<sup>28</sup> In effect, FORSCOM is now requiring units again to train using the CTC model not only to prepare for the rotation to the training centers but to maximize training effectiveness.

Such training clearly follows the nine principles of Army training and the eight-step training model. However, a few important points are necessary:

- Force-on-force exercises using the Multi-Integrated Laser Engagement System (MILES) are the most challenging (and effective) training available today because of the unconstrained competitive environment in which both friendly forces (BLUFOR) and OPFOR units operate.
- Battalion-level, combined arms training emphasizes multiechelon techniques specifically designed “to use available time and resources most effectively.”<sup>29</sup>
- Using appropriate doctrine includes training to standard not to time, conducting AARs after all training and retraining as necessary.

Just as a commander cannot learn to synchronize all the combat functions during a task-force deliberate breach operation using simulations (like Janus), the unit cannot fully understand how to conduct such an operation by doing it once on the ground. Effective training requires repetition. Despite reluctance to admit it, the retraining step may be the most important of our Army’s training model.

With enough resources and planning, the CTC training model can be very nearly replicated at home

station. Many would argue that cost is a prohibiting factor, but it does not have to be. Today, every heavy-force installation has heavy-equipment transports to save OPTEMPO miles getting tracked vehicles to and from the field. Others would claim that effective exercises require vast terrain and point out that many posts do not have such training areas and that the more miles vehicles drive, the more OPTEMPO dollars are consumed. However, actions on enemy contact through actions on the objective are normally what must be emphasized, and expansive terrain is not required for such exercises, even at battalion level. Furthermore, the key costs are not in dollars but in time to plan and execute, and in manpower to support and provide OPFOR and O/Cs.

At Fort Stewart, Georgia, a battalion task force with two company teams and an engineer company conducted a 5-kilometer attack to breach a wire/mined obstacle and seize a company-size objective. Four of these operations were conducted over eight days, requiring the task force to plan four different operations, repeating the full planning process and changing out one of the company teams each time. To include terrain-model and full rehearsals, as well as redo’s, the task force conducted 16 attacks, each consisting of at least one attempt to breach the obstacle. Not surprising, this task force went to NTC and conducted three successful breaches in three attempts against the mighty Krasnovian OPFOR.

## **Recommendations**

Many blame insufficient training time and money for units’ infrequent battalion-level field training exercises modeled on the training at the CTCs. But there is never enough time to train, so leaders must use the time available as effectively as possible.

Except for units preparing for or recovering from real-world missions, units today are not necessarily any busier than a decade ago. Despite having only 10 divisions instead of the 18 during the 1970s and being involved in more operations throughout the world than ever, not all our combat units are actively engaged in contingency operations. In the past several years, until the 1st Calvary Division was alerted for the mission in Bosnia, no division in the Continental United States was deployed on an operation that prevented superb field training.

Many soldiers such as those from the 3rd Infantry Division (Mechanized) (3ID), Fort Stewart, would argue that they have been quite busy on deployments for the past several years. For instance, a brigade (minus) from 3ID participates in the bi-annual *BRIGHT STAR* exercise, just as other divisions support other exercises. However, these exercises allow for intensive battalion-level field training, even more than at home station. Further-

more, during *DESERT THUNDER* in 1998, the 1st Brigade, 3ID conducted a CTC-like force-on-force training with MILES in Kuwait, which was even supported with an O/C team from NTC. Good units—made that way because their commanders—will find the time to train.

The shortage of training dollars is a much more legitimate reason for reducing field-training opportunities. Even though funded at 800 miles per tank, units only drove 652 miles per tank in fiscal year 1998. The difference financed other program areas like infrastructure that were critically underfunded. Worse, the average mileage of 652 miles includes an Army average of 75 miles per tank used for training at NTC, mileage that until fiscal year 1998 was not included in the annual mileage of 800 miles. Money is undoubtedly the primary problem. The Army must find the necessary additional training dollars, prohibit using training and maintenance funds for other programs or continue to accept a less-than-ready force.

FORSCOM has already agreed to fund the requirement to conduct a 5-day battalion-level maneuver training exercise prior to a CTC rotation. However, the complete force must be adequately trained, not just those units due for a CTC rotation. The US Army should be deeply concerned that the 2d Infantry Division “drove fewer [tank] miles (551) in fiscal 1998 than their counterparts in either the United States or Germany, despite the fact that Korea is considered one of the world’s most dangerous flashpoints.”<sup>30</sup> Units in Korea also lack the opportunity to train at a CTC. Providing adequate training dollars to train our force, including battalion-level maneuver training exercises, must continue to be the Army’s first priority.

Recognizing that requirements always have and always will drive training, the Army must require at least annual battalion-level field training exercises for all combat units. Of course, requirements without resources cause difficult problems for commanders. However, given priorities, commanders can make things happen. For example, in fiscal year 1998, the 1st Infantry Division (Mechanized) (1ID) headquartered in Wuerzburg, Germany, drove its tanks an average of 906 miles. Granted, the division was coming off the Bosnian mission and was training to return to high-intensity conflict standards. However, an Army source in the Pentagon attributed the 1ID’s high OPTEMPO to the aggressive training philosophy of the division’s commander, Major General David Grange. Realizing the importance of training, he used funds provided to buy new equipment to train his units beyond the level at which he was funded.<sup>31</sup> Using training requirements, in this case self-imposed, 1ID thus con-

ducted the necessary training for its units.

Even without additional training dollars, the requirement to conduct periodic battalion-level field exercises will force more innovative, efficient use of available training dollars—at least for the 652 OPTEMPO miles that units currently use. The suggested increased use of heavy equipment transport-

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ers, reduced-range scenarios and multiechelon training are a few ways to increase training efficiency. Furthermore, commanders must use the Army’s training doctrine, proven at our CTCs, to make training as effective as possible. So, while the Army as an institution takes high-level steps to correct training readiness problems, it must also scrutinize more closely the use of training funds and training methods at the lowest combined arms level.

Finally, the Army must reverse the trend to use simulations as a replacement for field training. Too often, virtual simulations and constructive training tools reduce field training opportunities and training funds. Such devices and systems should not cause an OPTEMPO trade-off but rather enhanced live training.

Currently, the Office of the Assistant Secretary of Defense for Force Management and Personnel (OASD FM&P) has the responsibility to ensure training does not decline because of added training simulators and training devices. However, OASD FM&P has admitted that the cost and training effectiveness analysis it conducts tends not to focus on the training value or the benefit as much as cost. The predictable result is “‘cheap solutions’ which, many times, cost the training community much in the form of additional time and personnel and certainly results in units less trained for operational readiness.”<sup>32</sup> In a move promising for accountants and ominous for readiness, a relatively new simulation system, the Close Combat Tactical Trainer, has significantly reduced the field OPTEMPO of units at Fort Hood, Texas. As promising as some simulators and training devices may be, such technology has deficiencies that only live training can overcome.

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To ensure our field forces once again conduct such training, the Army must take the following steps:

- Provide sufficient training funds, require their use and prohibit their migration to other programs.
- Require at least annual battalion-level field training exercises modeled after the training methods proven to be successful at our CTCs.
- Scrutinize training dollars to ensure commanders at all levels are enacting innovative and cost-

saving methods to train doctrinally and efficiently.

- Reverse the current trend that emphasizes simulations as a replacement for live training, rather a means to enhance it.

The art of battle command is an essential element of all leaders. For the United States to maintain its fighting edge in the future, it is imperative to develop this art among potential commanders. The art takes years to develop and can be best learned through realistic combat experiences. However, short of war, such experiences can be gained best through realistic and tough field training, the exact model that has made the CTCs so successful.

In this period of declining training funds, the Army must be cautious of virtual simulators and constructive training tools. Maximizing their effectiveness includes guarding against their totally replacing live training. Multiechelon field training exercises at the battalion level, supported with OPFOR and O/Cs, give leaders essential and realistic battle command experience as their units prepare for the CTCs—and for war. **MR**

## NOTES

1. Quoted in Colonel Paul Herbert and others, *Combat Training Centers: The 21st Century Schools for the Application of Military Art and Science* (Carlisle Barracks, PA: US Army War College, May 1995), 12.
2. Brigadier General Robert H. Scales Jr., *Certain Victory: The US Army in the Gulf War* (Washington, D.C.: Brassey's, 1994), 21.
3. Sean D. Naylor, "Size Does Matter," *Army Times*, 16 November 1998, 18.
4. Major General Roger C. Schultz, "Requesting Your Permission," electronic mail message to LTC Ron Bertha, 25 February 1999.
5. Headquarters, Department of the Army, US Army Field Manual 100-5, *Operations* (Washington, D.C.: US Government Printing Office, 14 June 1993), G-1.
6. Lieutenant Colonel William Glenn Webster, "Enhancing Battle Command with the Tools of the 21st Century," in *Notes from the Box* (Carlisle Barracks: US Army War College, March 1995), 5.
7. James W. Lussier and Terrill F. Saxon, *Critical Factors in the Art of Battle Command* (Alexandria, VA: US Army Research Institute, November 1994), 4.
8. Lieutenant Colonel Michael T. Hayes, *Battle Command—What is it, Why it is Important, and How to Get it* (Carlisle Barracks, PA: US Army War College, 15 April 1996), 1-26.
9. Department of the Army, TRADOC Pamphlet 525-200-1, *Battle Command* (Fort Monroe, VA: Headquarters, US Army Training and Doctrine Command, 1 December 1994), 4.
10. Lieutenant General Thomas N. Burnette Jr., "The Second Training Revolution," *Army*, October 1997, 116.
11. Janus, named for the ancient Roman god who guards portals, is an interactive, computer-based, wargaming simulation of combat operations conducted by platoons through brigade. Janus is fielded throughout the world and widely used by trainers and analysts in research and development, testing and Army advanced concepts and requirements. Janus models individual systems moving, searching, detecting and firing on the ground or in the air over a selectable region of a three-dimensional terrain representation. Each system being simulated appears as an individual symbol on a computer graphics display with a map-like background. Military analysts use these interactive computer graphics workstations to observe the progress of the simulated battle and to communicate orders and decisions to the combat forces being simulated. Janus is a two-sided, interactive, stochastic, closed combat simulation. The model simulates two OPFOR, simultaneously directed and controlled by two sets of players who directly monitor, direct, react to and redirect all key actions of the simulated units under their control.
12. Brigadier General James D. Thurman, former Commander of Operations Group, NTC, "NTC Info," electronic mail message to LTC Ron Bertha, 9 January 1999.

13. Ibid.
14. Lieutenant General Thomas N. Burnette Jr., "The Second Training Revolution," 118.
15. Brigadier General Robert H. Scales Jr., *Certain Victory: The US Army in the Gulf War*, 35.
16. Ibid, 20.
17. Combat Maneuver Training Center, 7th Army Training Command, USAREUR, "Combat Training Centers," undated; available from <<http://www.cmtc.7atc.army.mil/links/ctc.htm>>; Internet; accessed 22 December 1998.
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19. Lieutenant Colonel G. Chesley Harris, in *Combat Training Centers: The 21st Century Schools for the Application of Military Art and Science*, 10.
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24. Sergeant First Class Gregory Schwendeman, "More Training Needed in the Basics at Home," *Army Times*, 17 August 1998, 26.
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26. Headquarters, Department of the Army, US Army Field Manual 25-100, *Training the Force* (Washington, D.C.: US Government Printing Office, 15 November 1988), 1-3 and 1-5.
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29. US Army Field Manual 25-100, *Training the Force*, 1-4.
30. Sean D. Naylor, "Are Heavy Divisions Going the Extra Mile for the Training?," *Army Times*, 8 February 1999, 18.
31. Ibid.
32. Office of the Assistant Secretary of Defense for Force Management and Personnel, "Cost & Training Effectiveness," 26 June 1996; available from <<http://www.ist.ucf.edu/labsproj/projects/cte.htm>>; Internet; accessed 22 December 1998.

*Colonel Ronald L. Bertha, US Army, is currently serving as chief, Operational Capability Assessments-Southwest Asia, Center for Army Analysis, Fort Belvoir, Virginia. He received a B.S. from the US Army Military Academy, an M.S. from Carnegie-Mellon University and an M.B.A. from Long Island University. He is a graduate of the US Army Command and General Staff College, the Armed Forces Staff College and the US Army War College. He has served in a variety of command and staff positions, to include senior Mechanized Infantry Task Force trainer and observer/controller, National Training Center, Fort Irwin, California; commander, 3d Battalion, 7th Infantry Regiment, 3d Infantry Division (Mechanized), Fort Stewart, Georgia; doctrine analyst, J5, United States European Command, Stuttgart, Germany; S3 and XO, 1st Battalion, 18th Infantry Regiment, 24th Infantry Division (Mechanized), Fort Benning, Georgia; and S3, 2d Battalion, 29th Infantry Regiment, Fort Benning.*